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ABSTRACT

A recently developed instrument for the assessment of teachers' attitudes toward individualized reading was tested for unidimentionality using the Guttman model. The Sample was selected with the intention of maximizing item variability and thus scalability. None of the concepts in the instrument attained the minimum necessary coefficient of reproducibility (.90). It was recommended that further assessment of the questionnaire be continued. (Author)

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A recently developed instrument for the assessment of teachers' attitudes toward individualized reading was tested for unidimentionality using the Guttman model. The sample was selected with the intention of maximizing item variability and thus scalability. None of the concepts in the instrument attained the minimum necessary coefficient of reproducibility (.90). It was recommended that further assessment of the questionnaire be continued.

AN ASSESSMENT OF THE SCALABILITY OF THE READING TEACHER SURVEY

Charles D. Dziuban
Richard A. Thompson

Askov (1971) recently illustrated a survey pertaining to the appraisement of teachers' attitudes toward individualized reading instruction. The inventory was patterned after the well known semantic differential with demonstrated content validity. The author cited a Hoyt reliability coefficient of .93 (Green 1967) in claiming unidimentionality. Askov was able to demonstrate that the instrument was effective in discriminating among teachers attitudes toward reading instruction. She indicated that the instrument was applicable to a wide variety of situations and of more value than informal techniques.

Problem and Procedure:

It was the purpose of this study to further verify the unidimentionality of the individual concepts in Askov's instrument.

The Reading Teacher Survey, Revised Version, was administered to thirty-nine experienced elementary school teachers. The responses for each of the concepts across subjects were analyzed utilizing Guttman's (Edwards 1957) scale analysis. The model which is free from distributional assumptions regarding judgments and individuals is based on the rationale that an attitude is contained in a single dimension. The coefficient of reproducibility (Re) (Edwards 1957):

$$Re = 1 - \frac{\text{Total number of classification errors}}{\text{Total number of responses}}$$

was computed for each of the reading concepts contained in the instrument.*

* BioMedical Program, BMD05S

The minimal marginal reproducibility was also computed for each concept. The index is defined as (Edwards 1957): $MMR = \frac{\sum_{i=1}^{p} fi \text{ model}}{\text{total response}}$

where p is the number of variables and f is the frequency of responses to the model category of the i^{th} question. If the data conform to the Guttman model the coefficient (Re) should be at least .90 and the MMR not be excessively high (Edwards 1957). The subjects were selected from schools with a wide variety of reading approaches. They ranged from situations in which individualized instruction was successfully implemented and extensively emphasized to schools in which no emphasis was placed on such programs. The authors attempted with their selection procedure, to maximize item variability and thus scalability in the Guttman Sense. The results of the analysis are presented in Table 1.

INSERT TABLE ONE HERE

Only the concepts (1, 4, 6) approached scalability in the Guttman sense (although they did not meet the criteria). For the remaining dimensions the MMR exceeded the coefficient of Reproducibility. These results suggest that Askov's attitude survey was <u>not</u> scalable in the Guttman schema - at least with the sample used in this study. The data were in fact more easily reproducible using modal frequencies. The results appear "consistant" when the means and standard deviations of the items are examined.

INSERT TABLE TWO HERE

Discussion:

Askov has constructed an attitude instrument with which she demonstrated a degree of reliability and validity. The authors of the present study attempted to fit the Guttman model to data gathered using her questionnaire. An attempt was made to maximize subject variability by selecting teachers from a wide range of instructional situations. The results indicated that the Guttman model was inappropriate for the data collected for this particular group. It was not possible to achieve unidimentionality because the intended variability of the selection procedure was not evidenced in the data.

The value of an instrument capable of assessing teachers attitudes toward individualizing reading instruction is unquestionable. The accute assessment of such dimensions would be helpful to instructors teaching reading courses. Noting the potential value of this Instrument and recognizing that it has been thoughtfully devised, it is recommended that Askov's Reading Teacher Survey continue to be investigated and refined until unidimentionality can be consistantly demonstrated.

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REPRODUCIBILITY COEFFICIENTS OF EACH CONCEPT

TABLE I

Concept	Coef. of Reproducibility	Minimal Marginal Reproducibility
1	.678	.359
2	.144	.536
3	.218	.489
4	.769	.569
5	.251	.456
6	.711	.653
7	.367	.764
8	.282	.476
9	.068	.624
10	.315	.609
11	.084	.530

MEANS AND STANDARD DEVIATIONS OF THE SCALES FOR EACH CONCEPT

TABLE II

Concept	1 $\bar{X}$	1 σ	2 $\bar{X}$	2 σ	3 $\bar{X}$	3 σ	4 $\bar{X}$	4 σ	5 $\bar{X}$	5 σ	6 $\bar{X}$	6 σ	7 $\bar{X}$	7 σ
1	6.08	1.62	4.97	2.21	4.87	2.30	4.46	2.21	5.08	2.24	4.97	2.35	4.67	2.54
2	6.78	.630	5.62	1.95	5.11	2.41	5.73	1.99	5.93	2.00	5.10	2.38	-	-
3	6.26	1.41	5.72	1.75	5.62	2.03	5.26	2.42	5.13	2.42	5.15	2.57	-	-
4	2.31	1.92	1.82	1.30	2.26	1.94	2.67	2.08	1.92	1.53	-	-	-	-
5	6.23	1.39	5.51	1.92	5.18	2.34	5.15	2.21	5.28	2.21	-	-	-	-
6	6.41	1.35	5.90	1.96	6.13	1.56	5.95	1.99	-	-	-	-	-	-
7	6.95	.224	6.56	.91	6.51	1.10	6.26	1.45	6.56	1.25	6.38	1.68	-	-
8	5.62	1.79	1.59	1.85	5.90	1.60	6.18	1.30	5.33	2.25	5.67	2.04	5.49	2.30
9	6.15	1.53	6.28	1.28	6.03	1.68	-	-	-	-	-	-	-	-
10	6.32	1.44	6.16	1.46	6.21	1.43	5.95	1.74	5.97	1.85	6.03	1.79	5.74	2.18
11	6.34	1.19	6.29	1.22	6.05	1.37	6.11	1.67	5.79	1.86	-	-	-	-